

ECOLOGY AND ENVIRONMENT, INC.,

REGION VI

MEMORANDUM

TO: Keith Bradley, Region VI RPO

FROM: Miles Bolton, Ground Water Hydrologist *MWB*

THRU: K. H. Malone, Jr., Region VI RPM *KHM*

CEDAR CHEM CO

DATE: July 29, 1986

ARD99066C649

SUBJ: Sampling Mission Results from the Vertac-West Helena Site,  
West Helena, AR (AR 361)

TDD# R06-8507-13

INTRODUCTION

FIT was tasked by the USEPA to conduct a sampling mission at the Vertac-West Helena site, West Helena, Arkansas, Figure 1. It was specifically requested that both surface and subsurface soil samples be collected at three inactive surface impoundments located along Vertac's northwestern boundary. It was agreed that three sample stations would be established for each impoundment area.

SITE DESCRIPTION AND HISTORY

On October 19, 1985, FIT members Miles Bolton, Weldon Day and Jeff Dubose met with site representative Joe Porter to discuss the following day's sampling mission and obtain additional site information. A summary of the site history follows:

A man named Kencade started operations at this site around 1970 manufacturing methoxychlor. At that time, ponds were present where the inactive surface impoundments are now located. In 1972 the chemical plant was sold to Jerry Williams who sold the plant to ANSEL later in 1972. In 1973 the plant was again purchased by Jerry Williams. By 1973 the plant was known as Eagle River Chemical. The name was later changed to Vertac, Inc. The predominant chemicals manufactured in the past were dinitro herbicide and propanil. The major chemicals currently being manufactured are methyamil, permethrin, synergemethrin, and a hydrocarbon polymer that is composed of kerosine and I sonax 132. Mr. Porter claims that the yellow blocks scattered throughout the inactive portion of the site are where ANSEL buried dinitro drums.

The surface impoundments were created from the ponds around 1972-73. Limestone was added to the narrow impoundment for the acid neutralization of



207317

dichloromalone and propionic acid. The other two ponds were used as waste disposal. Wash water from Helena Chemical's (AR 1589) chemical formulation operations was also placed into the ponds. Helena Chemical stopped disposing of their wastes in the ponds around 1976-77.

The ponds were closed in 1978. The closure procedure consisted of pumping the water from the pond (the water was removed by Rollins) and placing a clay cap consisting of native soil and bentonite over the impoundments. An aerial photograph owned by Vertac indicates the narrow pond was approximately 2-4 feet deep and the other two ponds were approximately 5 to 10 feet deep.

#### SAMPLING RESULTS

Nine surface and nine subsurface samples were collected by FIT members Miles Bolton, Weldon Day, Jeff Dubose, Thomas Lensing and Lloyd Collins on October 20, 1985. Their locations are shown in Figure 3. The subsurface samples were collected using post hole diggers. Since the maximum depth obtainable with post hole diggers is about 5 feet, the samples were collected along the sides of the ponds to ensure penetrating the fill material used to cover the ponds. In all cases, the subsurface soil samples were collected after a lithologic change in the soil profile was evident, indicating the subsurface samples consisted of non-fill material.

Organic and inorganic laboratory results, field sample documents and photographs are attached to this report. The sample stations were lettered A through I. The number 1 was added as a suffix to each letter to indicate surface samples and the number 2 was added to indicate subsurface samples. Note in the laboratory results that organic samples from Stations D1, G-2, H1 and I2 had to be analyzed as medium concentration samples by the laboratory. Table 1 summarizes the organic surface sample results and Table 2 summarizes the organic subsurface sample results. These tables do not list any compounds that were flagged as being present in laboratory blanks, tentatively identified, or below detection limits. Therefore, only those compounds positively identified as being present in the samples are listed.

The organic sample results indicate that the surface fill material for pond #1 is more contaminated than the subsurface material, especially at Station B. The opposite is true for ponds 2 and 3. Only pesticides were positively identified in the subsurface samples.

In contrast to the organic results, the inorganic sample results do not indicate the presence of significant inorganic contamination. The lack of a background sample, however, makes it difficult to draw definite conclusions.

#### CONCLUSIONS AND RECOMMENDATIONS

It is evident from the sample results that the subsurface material is contaminated with pesticides and other organic compounds and the surface fill material is contaminated with pesticides. Since the surface fill material is contaminated with a variety of pesticides, the possibility that the contamination extends beyond the site boundaries should be considered.

Considering the area's dependence upon ground water, the FIT recommends that monitoring wells be installed around the ponds to determine if the ground water has been affected by the organic compounds. The proposed well locations are shown in Figure 4. These locations would provide water quality and local hydraulic gradient information. Currently, FIT lacks local hydrogeologic information for the area around the site. Therefore, the specific design of the wells will be dependent upon the acquisition of additional hydrogeologic information.

If the EPA desires to determine whether or not the surface soil contamination extends beyond the fill material as a result of wind blown action or possible indiscriminate dumping, then the FIT recommends that surface soil samples be collected outside of the pond area. The proposed locations are shown in the attached aerial photograph, Figure 5. Each sample would be a composite consisting of soil collected at the station and four other locations no more than 10 feet from the station. Based upon these results, a comprehensive sampling plan could be developed to accurately determine the extent of surface pesticide contamination.

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IT IS DUE TO THE QL  
OF THE ORIGINAL.

Table 1. Organic surface soil results from the Vertac-West Helena site (AR 361). Only results that were not flagged are shown. Concentrations are in parts per billion.

Station	A1	B1	C1	D1	E1	F1	G1	H1	I1
4,4'-DDT		1,813	26		30	34	25		
Methoxychlor	3,984	12,996	241			184	817	221	444
Aldrin		596.1						37	
Dieldrin		1.120							
Chlordane		3,563							
4,4'-DDE		421							

Table 2. Organic surface soil results from the Vertac-West Helena site (AR 361). Only results that were not flagged are shown. Concentrations are in parts per billion.

Station	A2	B2	C2	D2	E2	F2	G2	H2	I2
4,4'-DDT			22						
Methoxychlor	216			85,121		5,659	17,266		654,178
Aldrin						1,073.6			
Chlordane						14,360			
1,2 Dichloroethane					190				
Phenol				1,800	840		3,100		
Bis(2-ethyl hexyl) phthalate	670	2900							
1,2-dichlorobenzene								30,000	
Gamma-BHC				72.2	98.3				4,980
Toluene							4,000	34,000	16,000
Ethylbenzene									28,000
Chlorobenzene									2,600
Total xylenes							1,700	3,300	180,000
2-hexanone								75,000	75,000

QA/QC

After reviewing the data obtained from samples taken at the Helena facility the results are as follows:

In the inorganic analysis the spike recoveries for lead (65%), selenium (0%), silver (60%), tin (17%), manganese (70%) were below QC limits. Any values reported for these elements may be biased to the low side, and actual values may be higher than reported values.

The duplicate analysis for calcium should be used. The duplicate analysis for inorganics were satisfactory.

For the organic analysis the surrogate recoveries for FC286 and FC287 were outside of QC limits. The samples were reextracted and reanalyzed, however the reanalysis was not done until after the original analysis so the results from the original analysis are not available. Since the surrogates were out of QC limits both times it is believed that the problem was real matrix interference in the samples and not a lab error.

For sample FC291 the % RPD for the volatiles were all within acceptable limits. Since this was a field rinse blank the effect was probably minimal.

For sample FC280 the % surrogate recoveries for all compounds found were all above QC limits. Values reported for this sample may be higher than the actual values.

All compounds found in the lab blank were flagged with a question mark.

The tuning and calibration analysis for these samples was performed.

The analysis of these samples show that each location contained several pesticides at varying concentrations.

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AS LEGIBLE AS THIS LABEL,  
IT IS DUE TO THE QUALITY  
OF THE ORIGINAL.

### INORGANIC SOIL ANALYSIS SUMMARY

Page 1 of 3

CASE NUMBER: 4781

SITE NAME/CODE: Vertac, W. Helena AR 361

#### CONCENTRATIONS (ppm)

#### EPA Sample Numbers

PARAMETER	EPA Sample Numbers										AMBIENT BACKGROUND I.		
	NFB341	NFB350	NFB342	MFB351	NBF343	MFB354	MFB344	MFB355	MFB345	MFB356	NF3346	Western U.S. 2.	Eastern U.S. 2.
Matrix type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Aluminum	3570	3690	3710	2760	3320	3240	2870	2750	5330	5920	3000	58,000	33,000
Antimony									28R			.47	.52
Arsenic	11R	6.3R	16R	4R	6.9R	7.8R	20R	21.2R	7.2R	9.9R	4.6R	5.5	4.8
Barium	111	84	144	110	90	87	109	68	118	122	88	580	290
Beryllium												0.68	0.55
Cadmium												1	1
Calcium	13,100*	6650*	4700*	21,500*	15,200*	23,900*	16,100*	217,000*	8610*	1470*	11,900*	18,000	3,200
Chromium					5.2				5.4			41	33
Cobalt												7.1	5.9
Copper	12	8	6.1	7.5	8.2	7.6	7	4.3	6.9	9.9	6.2	21	13
Iron	10,500	10,400	8160	9530	9880	10,400	9250	5330	11,400	12,200	8670	21,000	14,000
Lead	7.8R	7.3R	9.4R	5.9R	7.4R	6.8R	6.3R	3.3R	7.7R	8.5R	7.2R	17	14
Magnesium	6850	3950	2340	11,700	8550	12,500	8850	12,300	5190	360	6780	7,800	2,300
Manganese	627R	444R	640R	500R	636R	579R	661R	459R	582R	515R	519R	380	260
Mercury	0.081	0.038	0.095	0.067	0.079	0.050	0.057	0.019	0.048	0.083	0.067	0.046	0.081
Nickel												15	11
Potassium	483		490	2.91					828	788	379		
Selenium												.23	.30
Silver												-	-
Sodium	542	485	469	712	388	502	566	734	650	822	465	10,000	2,600
Thallium												9.1	7.7
Tin												.90	.96
Vanadium												70	43
Zinc	40	32	27	32	38	37	34	31	36	34	33	55	40
Cyanide			0.54R		0.52R				0.53R	1.4R	0.60R		
Station No.	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1		
Sample Station Location	INACTIVE IMPOUND- MENT, NORTH POND (SUB- SURFACE)	INACTIVE IMPOUND- MENT, NORTH POND	INACTIVE IMPOUND- MENT, NORTH POND (SUB- SURFACE)	INACTIVE IMPOUND- MENT, NORTH POND	INACTIVE IMPOUND- MENT, NORTH POND (SUB- SURFACE)	INACTIVE IMPOUND- MENT, SOUTH POND	INACTIVE IMPOUND- MENT, SOUTH POND (SUB- SURFACE)	INACTIVE IMPOUND- MENT, SOUTH POND	INACTIVE IMPOUND- MENT, SOUTH POND	INACTIVE IMPOUND- MENT, SOUTH POND (SUB- SURFACE)			

E=Indicates a value estimated or not reported due to the presence of interference.

R-spike sample recovery is not within control limits.

\*=duplicate analysis is not within control limits.

I. Values obtained from "Element Concentrations Soils and Other Surface Materials of the Contiguous United States", dated 1984. U.S.G.S. Professional Paper 1270.

2. Reference for East/West Division is the 96 W longitudinal line which bisects Region VI.  
10/31/85

INORGANIC SOIL ANALYSIS SUMMARY

Page 2 of 3

CASE NUMBER: 4781

SITE NAME/CODE: Vertac, W. Helena AR 361

PARAMETER	CONCENTRATIONS (ppm) EPA Sample Numbers								AMBIENT BACKGROUND I.	
	MFB357	MFB347	MFB358	MFB348	MFB359	MFB349	MFB360		Western U.S. 2.	Eastern U.S. 2.
Matrix type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL		SOIL	SOIL
Aluminum	4240	4020	3780	2830	4180	3640	2910		58,000	33,000
Antimony									.47	.52
Arsenic	6.6R	6.0R	5.8R	4.9R	7.6R	5.9R	3.2R		5.5	4.8
Barium	103	110	117	116	79	117	70		580	290
Beryllium									0.68	0.55
Calcium									1	1
Chromium	13,500*	11,100*	2310*	25,100*	50,500*	22,300*	96,200*		18,000	3,200
Cobalt									41	33
Copper	11	8.5	11	9.9	9.4	12			7.1	5.9
Iron	9970	10,800	9350	10,500	8430	11800	5680		21,000	14,000
Lead	6.1R	8.5R	9.2R	6.4R	5.1R	6.9R	4.8R		17	14
Magnesium	7320	5940	1390	13,500	6700	11,700	3720		7,800	2,300
Manganese	439R	594R	342R	650R	274R	702R	482R		380	260
Mercury	0.070	0.063	0.075	0.045	0.084	0.070	0.042		0.046	0.081
Nickel	10			34		11			15	11
Potassium	823	277	736		975		453			
Selenium									.23	.30
Silver									-	-
Sodium	627	628	568	597	594	642	532		10,000	2,000
Thallium									9.1	7.7
Tin									.90	.96
Vanadium	16					16			70	43
Zinc	39	37	31	38	38	46	17		55	40
Cyanide			0.56R							
Station No.	F2	G1	G2	H1	H2	I1	I2			
Sample Station Location	INACTIVE IMPOUND- MENT, SCUTH POND (SUB- SURFACE)	INACTIVE IMPOUND- MENT, WEST POND	INACTIVE IMPOUND- MENT, WEST POND (SUB- SURFACE)	INACTIVE IMPOUND- MENT, WEST POND	INACTIVE IMPOUND- MENT, WEST POND (SUB- SURFACE)	INACTIVE IMPOUND- MENT, WEST POND	INACTIVE IMPOUND- MENT, WEST POND (SUB- SURFACE)			

E-Indicates a value estimated or not reported due to the presence of interference.

R-spiking sample recovery is not within control limits.

\*-duplicate analysis is not within control limits.

1. Values obtained from "Element Concentrations Soils and Other Surface Materials of the Conterminous United States", dated 1984. U.S.G.S. Professional Paper 1270.

2. Reference for East/West Division is the 96°W longitudinal line which bisects Region VI.  
10/31/85

## INORGANIC WATER ANALYSIS SUMMARY

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CASE NUMBER: 4781

SITE NAME/CODE: Vertac, W Helena AR 361

## CONCENTRATIONS (ppb)

## EPA Sample Numbers

PARAMETER				EPA Sample Numbers										Drinking Water Criteria	
	MFB352	MFB353	MFB361											Primary	Secondary
Matrix type	WATER	WATER	WATER												
Aluminum															
Antimony															
Arsenic															50
Barium															1000
Beryllium															
Cadmium															10
Calcium	144*	168*	156*												
Chromium															
Cobalt															50
Copper															1000
Iron															300
Lead															50
Magnesium															
Manganese															50
Mercury	0.052	0.032	0.041												2
Nickel															
Potassium															
Selenium															10
Silver															50
Sodium	217	222	217												
Thallium															
Tin															
Vanadium															
Zinc															5000
Cyanide															
Station No.															
Sample Location	RINSATE BLANK	RINSATE BLANK	RINSATE BLANK												

\*=Indicates a value estimated or not reported due to the presence of interference.

R=spike sample recovery is not within control limits.

\*=duplicate analysis is not within control limits.

**Table II: ORGANIC ANALYSIS SUMMARY**

Concentration ppb Page 1 of 1

1. Priority Pollutant.
  2. Specified Hazardous Substance.
  3. Tentatively Identified.

VDA - Volatile  
A&N - Acid Base/neutral  
Pest - Pesticide

- B - The analyte is found in the lab blank.
  - J - Indicates an estimated value for tentatively identified compounds/compounds found below detection limit.
  - P - Present in sample, but not reported by lab.

Site Name/Code Vertac, W. Helena, AR 0961Case Number 4781

Concentration ppb

Page 1 of 4

Table II: ORGANIC ANALYSIS SUMMARY

Sample Station Number and Location	Scan No.	Fraction /Class	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2
EPA SAMPLE NUMBER			FC289	FC289	FC291	FC290	FC282	FC291	FC283	FC294	FC283	FC293	FC285	FC296
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Methylene Chloride	VDA/1	9B	10B	12B	23B	9B	12B	50B	35B	11B	150B	6B	16B	16B
Chloroform	VDA/1	7B	6B	7B	7B	7B	7B	80B	6B	11CB	6B	7B	7B	7B
Benzene	VDA/1	1B		1B				800B	1B	1B				
Toluene	VDA/1													
1,1,1-trichloroethane	VDA/1													
1,2-dichloroethane	VDA/1													
Ethylenetrione	VDA/1													
Chlorobenzene	VDA/1													
Acetone	VDA/2													
Total xylenes	VDA/2													
2-hexanone	VDA/2													
N-nitrosodiphenylamine	ABN/1	359J				465J	465J	26J	26J	475J				207RJ
Phenol	ABN/1									180J				
1,2-dichlorobenzene	ABN/1									450				
Bis-(2-ethylhexyl) phthalate	ABN/1							670	6900	205J	475J			
4,4-DNT	Pest/1					1813	26	22		30				
4,4-DNE	Pest/1					421								
Metabolochlor	Pest/1	3984	216	12,996		341	105,6J	106,8J	85,12J	99,6J	114J	184	5459	
Aldrin	Pest/1					586,1								1073.6
Dieldrin	Pest/1					1120		10,9J						
Chlordane	Pest/1					3563								14,360
Gamma-HBC (1,1,1,1-tetradecane)	Pest/1													
Hexamethylcyclotrisiloxane	VDA/3	102J8	111J8	340J8	301J8	74J8	84J8	1500J8	72J	98,3	180J8	36J8	2020	
Metoxybenzene	VDA/3							9J		1100J				13J
Unknown	VDA/3	62								1600J				
Unknown Alkane	VDA/3	247									400J			
Unknown Alkane	VDA/3	263									44J			
Unknown Alkane	VDA/3	441									7J			
1,2-dichloro-1-nitrobenzene	ABN/3													
Unknown Alkane	ABN/3	1510	ABN/3	390J				420J				180J	450J	
Unk. carboxylic acid	ABN/3	1518	ABN/3	390J				950J					450J	
Unk. polynuclear aromatic	ABN/3	1517	ABN/3	3900J										
Unknown Alkane	ABN/3	2222	ABN/3	1100J					250J				160J	
Unk. unknown Alcohol	ABN/3	530	ABN/3	230J				20J				320J		
Unknown Amino	ABN/3	1798	ABN/3	230J				30J			300J		720J	
Unknown	ABN/3	1842	ABN/3	290J		2600J		1100J						
Unknown	ABN/3	518	ABN/3			2100J								
Unknown Ketone	ABN/3	1684	ABN/3			2500J		1100J						
Unknown Alkane	ABN/3	1677	ABN/3				260J					380J	660J	
Unknown	ABN/3	2394	ABN/3					810J				1600J	130J	
Unk. Substituted Benzene	ABN/3	401	ABN/3									1300J	240J	
Unknown Alkane	ABN/3	1625	ABN/3									480J		
Unknown Alkane	ABN/3	2118	ABN/3									510J		
Unknown Amino	ABN/3	1496	ABN/3									1000J		
Unknown	ABN/3	1580	ABN/3									1100J		1700J
Unk. Carboxylic Acid	ABN/3	1364	ABN/3									340J		700J
Unknown Alkane	ABN/3	1941	ABN/3											

1. Priority Pollutant.

2. Specified Hazardous Substance.

3. Tentatively Identified.

VDA - Volatile

ABN - Acid Base/Neutral

Pest - Pesticide

3 - The analyte is found in the lab blank.

J - Indicates an estimated value for tentatively identified compounds  
compounds found below detection limit.

D - Present in sample, but not reported by lab.

**Table II: ORGANIC ANALYSIS SUMMARY**

### I. Priority Pollutant.

2. Specified Hazardous Substance.  
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## Pest ~ Pesticide

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Site Name/Code      Vertac, W. Helena AR 0361

Table II: ORGANIC ANALYSIS SUMMARY  
Case Number 4781

Concentration pp\_b Page 3 of 4

Sample Station Number and Location	Scan No.	Fraction /Class	G1	G2	H1	H2	I1	I2					
EPA SAMPLE NUMBER			FC286	FC297	FC287	FC298	FC288	FC299					
MATRIX			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL					
Methylene Chloride	VOA/1	15B	2200B	2300B	3300B	17B	1710B						
Chloroform	VOA/1	21	815B	790B		7B	1710B						
Benzene	VOA/1	7B	845B					1710B					
Toluene	VOA/1		1000	790J	34,000			16,000					
1,1,1-trichloroethane	VOA/1					7J							
1,2-dichloroethane	VOA/1												
Ethylbenzene	VOA/1		845J		1600J			28,000					
Chlorobenzene	VOA/1							2600					
Acetone	VOA/2	11B	5200B	4600B		42B							
Total xylenes	VOA/2		1700		3300			180,000					
2-hexanone	VOA/2				75,000			75,000					
N-nitrosodiphenylamine	ABN/1	444J	2256J					13,680J					
Phenol	ABN/1		3100										
1,2-dichlorobenzene	ABN/1		2256J					30,000					
Bis(2-ethylhexyl) phthalate	ABN/1					446J							
4,4-DDT	Pest/1	25				21,3J							
4,6-DDE	Pest/1												
Methoxychlor	Pest/1	817	17,266	22J		444	654,178						
Aldrin	Pest/1			37									
Dieldrin	Pest/1												
Chlordane	Pest/1												
Gamma-BHC (lindane)	Pest/1						4980						
Hexamethylcyclotriphosphazane	VOA/3	85,1B	520,1B	930,1B	1000,1B	860,1B	46,1B						
Methoxybenzene	VOA/3		28,000J		200,000J		140,000J						
Unknown	62	VOA/3	850J	2000J			2000J						
Unknown Alkane	247	VOA/3											
Unknown Alkane	263	VOA/3											
Unknown Alkane	441	VOA/3											
1,2-dichloro-3-nitrobenzene	ABN/3		15,000J				740,000J						
Unknown Alkane	1510	ABN/3											
Unk. carboxylic acid	1518	ABN/3											
Unk. polynuclear aromatic	1937	ABN/3											
Unknown Alkane	2222	ABN/3											
Unknown Alcohol	530	ABN/3					310J						
Unknown Amine	1798	ABN/3	250J				740J						
Unknown	1842	ABN/3	270J	1900J			230J						
Unknown	508	ABN/3											
Unknown Ketone	1684	ABN/3											
Unknown Alkane	1677	ABN/3											
Unknown	2394	ABN/3											
Unk. Substituted Benzene	401	ABN/3		3300J		380J	56,000J						
Unknown Alkane	1025	ABN/3		1900J			71,000J						
Unknown Alkane	1218	ABN/3											
Unknown Amine	1456	ABN/3		2200J			24,000J						
Unknown	1580	ABN/3											
Unk. Carboxylic Acid	1364	ABN/3											
Unknown Alkane	1941	ABN/3											

1. Priority Pollutant.

2. Specified Hazardous Substance.

3. Tentatively Identified.

VOA - Volatile

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Table II: ORGANIC ANALYSIS SUMMARY  
Case Number 4781

Site Name/Code Vertac W. Helena AR 361

Case Number 4781

Concentration ppb Page 4 of 4

1. Priority Pollutant.
  2. Specified Hazardous Substance.
  3. Tentatively Identified.

VOA - Volatile  
ABN - Acid Base/Neutral  
Pest - Pesticide

- B - The analyte is found in the lab blank.  
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compounds found below detection limit.  
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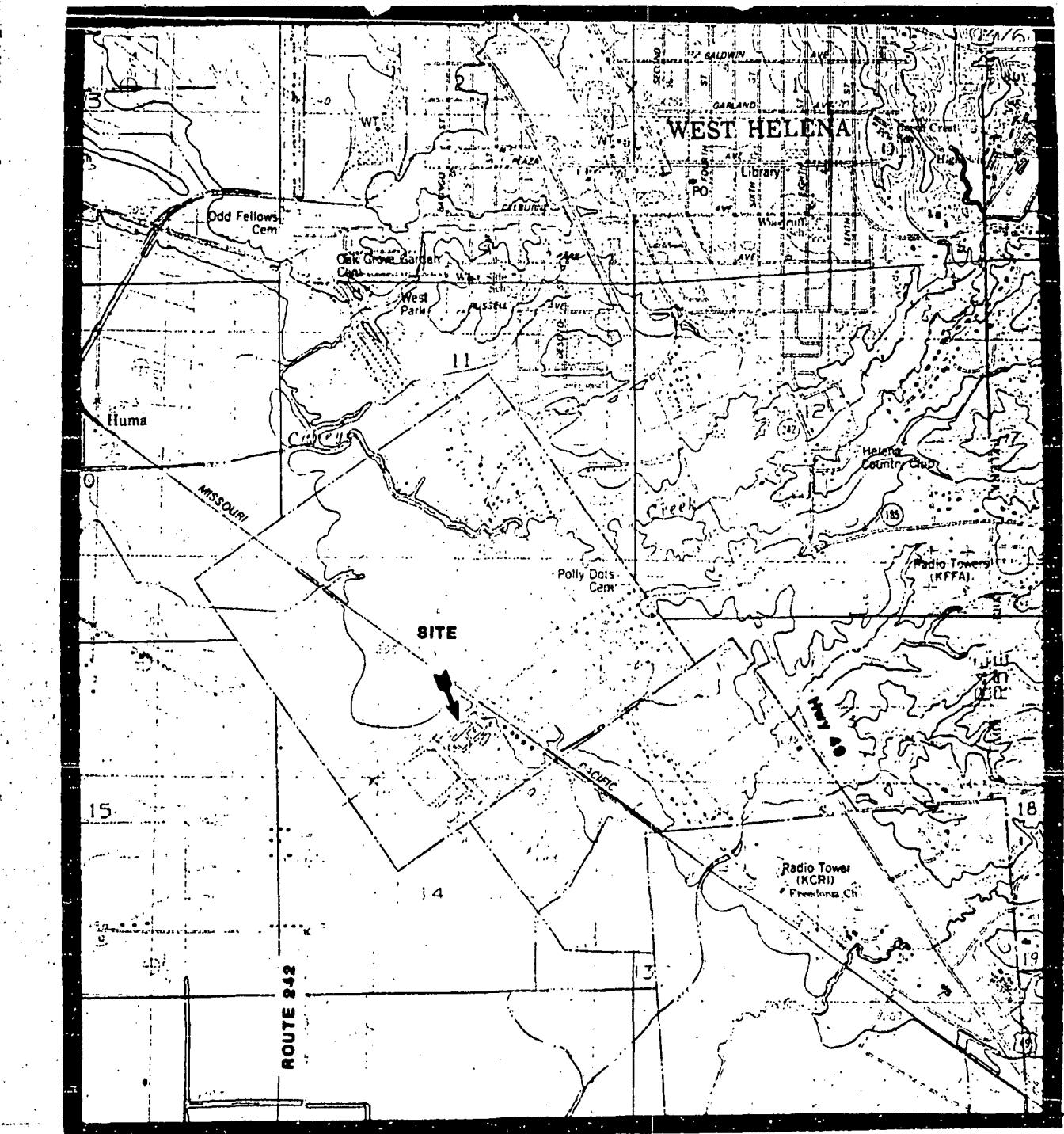


Figure 1. Site location map for the Vertac-West Helena site in West Helena, Arkansas (AR 361).

Scale: 1 inch  $\approx$  2,000 Ft.

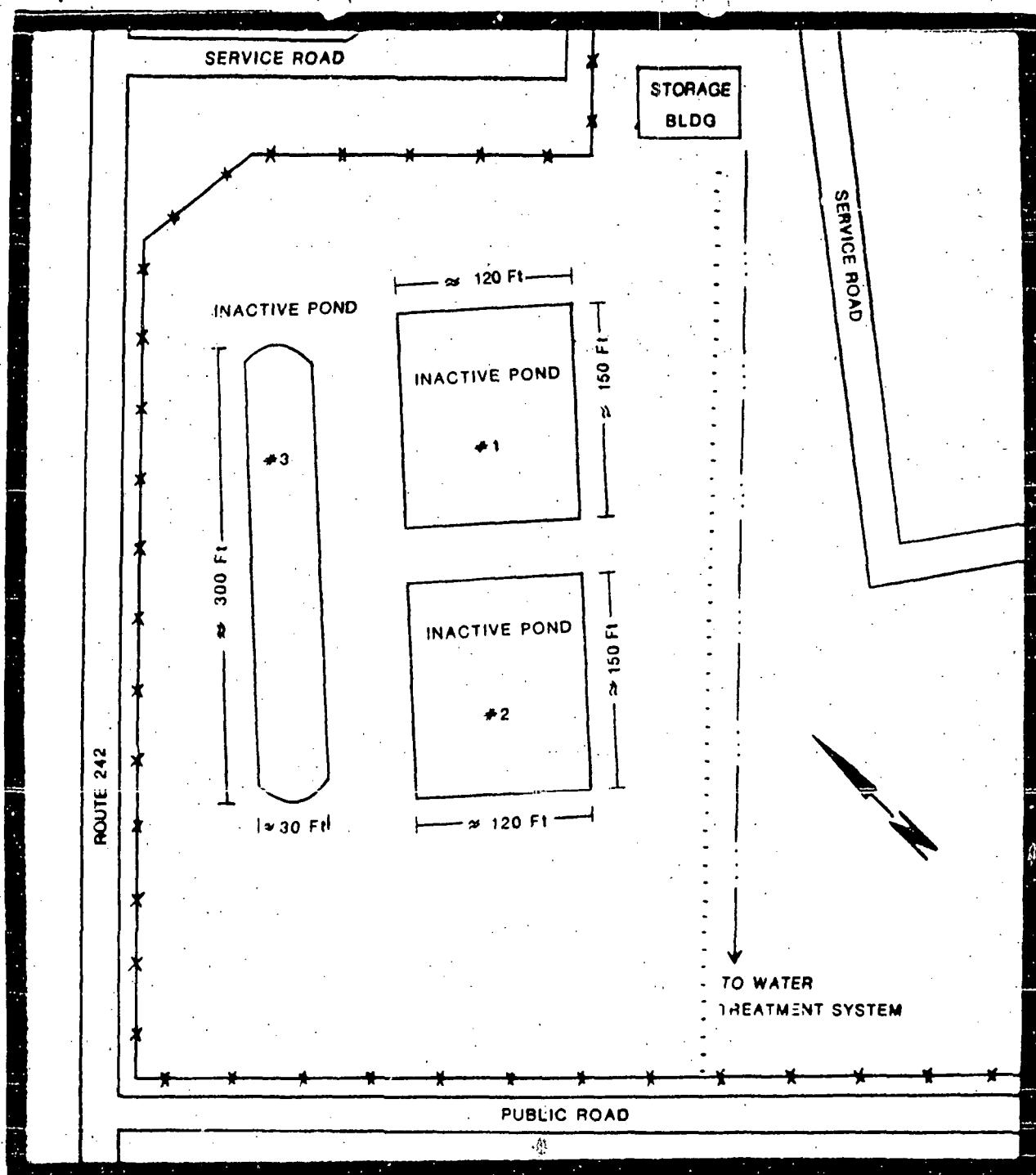


Figure 2. Site sketch of the inactive ponds located at the Vertac-West Helena site (AR 361). The pond boundaries and dimensions are estimates.

— Berm

← → Open culvert

\* \* Fence

Not drawn to scale

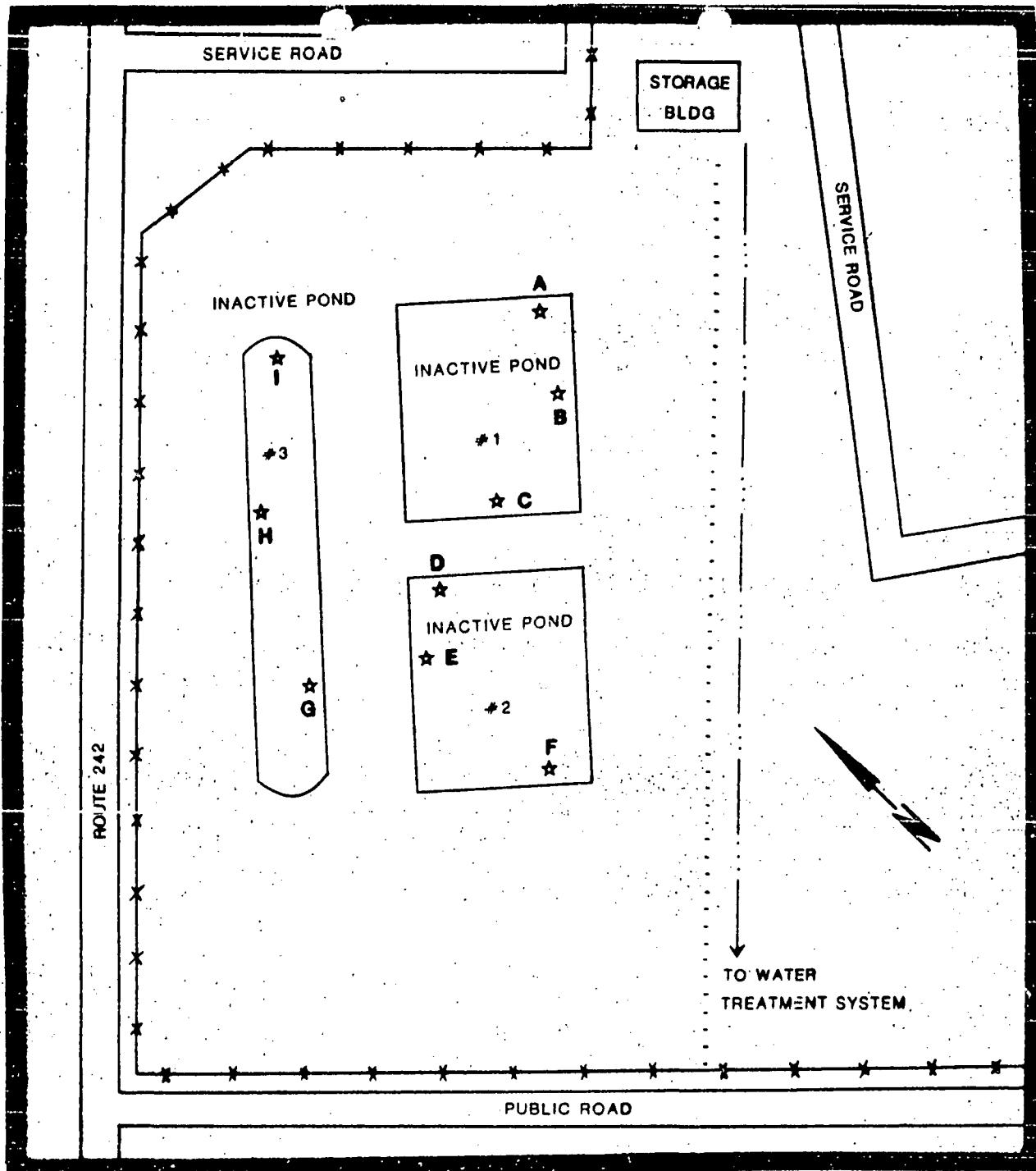


Figure 3. Sample station locations at the Vertac-West Helena site (AR 361).

★ Sample stations

\* \* Fence

— Berm

←---- Open culvert

Not drawn to scale

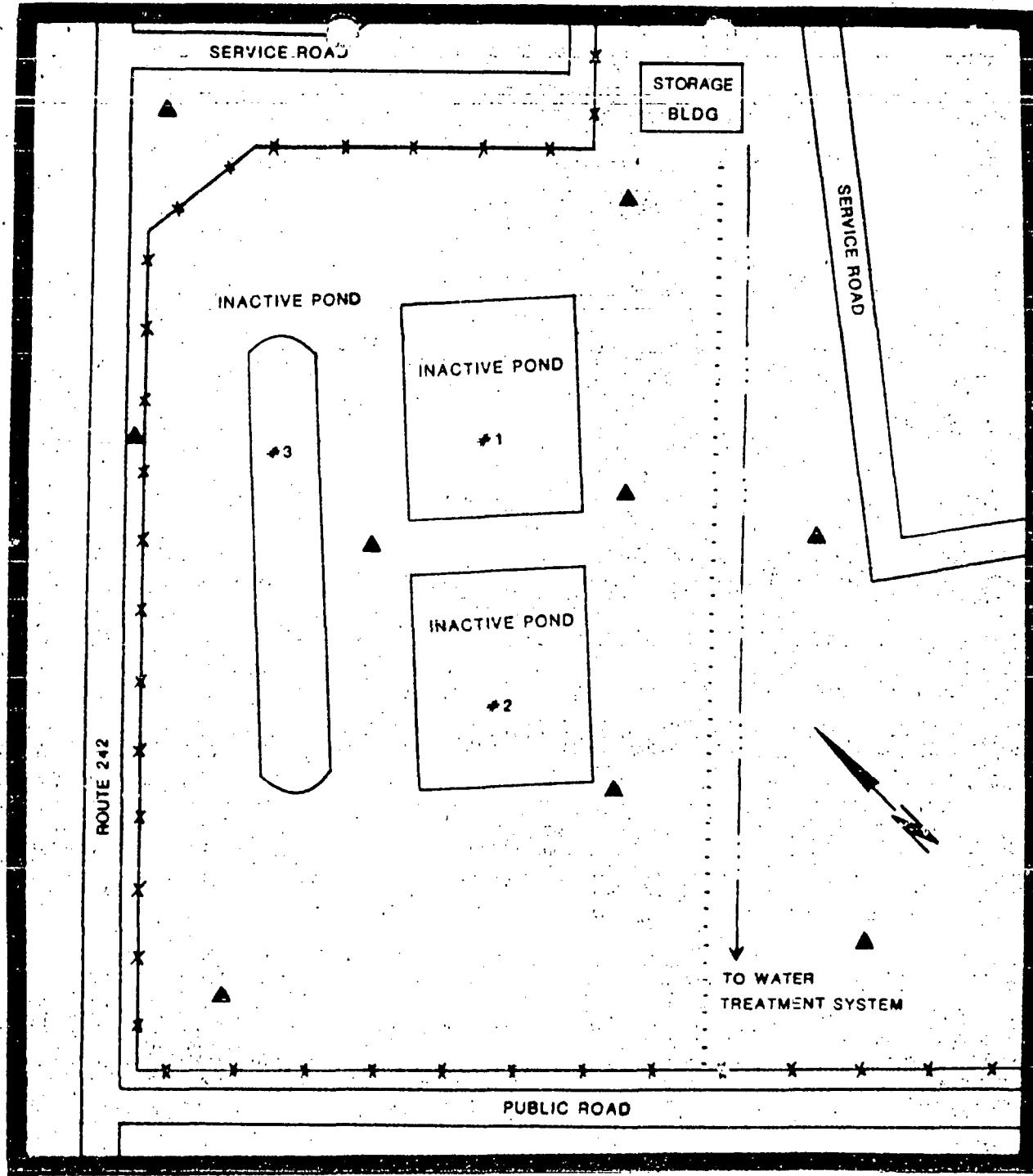


Figure 4. Proposed monitoring well locations for the Vertac-West Helena site (AR 361).

▲ Well locations

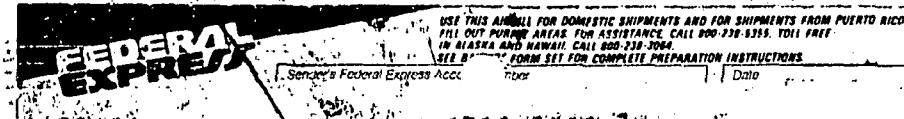
\* Fence

- - - Berm

← - - - Open culvert

Not drawn to scale





190498

From (Your Name)		Your Phone Number (very important)		To (Recipient's Name)		Recipient's Phone Number (very important)	
Company		Department/Floor No		Company		Department/Floor No	
<b>ECOLOGY &amp; ENVIRONMENT INC.</b>							
Street Address <b>1509 MAIN ST STE 819</b>				Exact Street Address (Use of P.O. Boxes or P.O. # Zip Codes Will Delay Delivery And Result In Extra Charge)			
City <b>DALLAS</b>		State <b>TX</b>		City		State	
AIRBILL NO <b>851764642</b>		ZIP * Zip Code Required For Correct Invoicing <b>75201</b>		ZIP * Zip Code Required For Correct Invoicing		ZIP * Zip Code Required For Correct Invoicing	
<b>YOUR BILLING REFERENCE INFORMATION (FIRST TWELVE CHARACTERS WILL APPEAR ON INVOICE)</b>							
<input type="checkbox"/> Bill Shippers <input type="checkbox"/> Bill Recipient's FedEx Acc't No. <input checked="" type="checkbox"/> Bill My Account <small>Full Air Line Options</small> <input type="checkbox"/> Cash <input type="checkbox"/> FedEx Acc't No or Major Credit Card No				<input type="checkbox"/> Bill Credit Card <small>Full Air Line Options</small>			
<b>SERVICES:</b> <b>CHECK ONLY ONE BOX</b>		<b>DELIVERY AND SPECIAL HANDLING</b> <b>CHECK SERVICES REQUIRED</b>		<b>PACKAGES</b> <input type="checkbox"/> <input type="checkbox"/> <b>OVERNIGHT LETTER</b> <small>Priority Mail Delivery Using Your Mailing Label</small>		<b>WEIGHT</b> <input type="checkbox"/> <small>Overweight Delivery</small>	
<input checked="" type="checkbox"/> <b>PRIORITY 1</b> <input type="checkbox"/> <b>Overnight Delivery</b> <small>Using Your Mailing Label</small>		<input type="checkbox"/> <b>HOLD FOR PICK-UP</b> Give me the Federal Express address where you want package held in Seattle <small>N at right</small>		<input type="checkbox"/> <small>Overweight Delivery</small>		<b>YOUR DECLARED VALUE</b> <small>(Leave Right)</small> <input type="checkbox"/> <b>OVER SIZE</b>	
<input type="checkbox"/> <b>OVERNIGHT DELIVERY</b> <b>USING OUR PACKAGING</b> <small>Counter-Size Overnight Envelope</small>		<input type="checkbox"/> <b>DELIVER WEEKDAY</b>		<input type="checkbox"/> <small>Overweight Delivery</small>		<b>ZIP * Zip Code of Street Address Required</b>	
<input type="checkbox"/> <b>Overnight Box</b> <small>12" x 17" x 3"</small>		<input type="checkbox"/> <b>DELIVER SATURDAY</b> (Extra charge applies)		<input type="checkbox"/> <small>Overnight Delivery</small>		<b>YOUR DECLARED VALUE</b> <b>DAMAGE OR LOSS</b>	
<input type="checkbox"/> <b>Overnight Tube</b> <small>36" x 6" x 6"</small>		<input type="checkbox"/> <b>RESTRICTED ARTICLES SERVICE</b> (H-A) <small>Standard Air Package Only Extra Charge Applies</small>		<input type="checkbox"/> <small>Overnight Delivery</small>		<small>We are liable for no more than \$100 per package in the event of physical loss or damage unless you list a higher Declared Value to the left and choose the appropriate service level. If you declare a value above \$100, we will add an additional \$100 of declared value up to a maximum shown in our Service Guide. Declared value restrictions are shown on the back of the Service Guide. Check the chart to make no rentals or implied warranties.</small>	
<b>STANDARD AIR</b> <small>Delivery not later than second business day</small>		<input type="checkbox"/> <b>SIGNATURE SECURITY SERVICE</b> (SOS) <small>Extra Charge Applies</small>		<input type="checkbox"/> <small>Overnight Delivery</small>		<b>DELAY</b> <small>There is a charge of \$10 for delivery of late delivery. In the event of a late delivery Federal Express will incur a surcharge around air transportation charges plus one-half of Director's Copy of the air rate for each additional day.</small>	
<b>SERVICE COMMITMENT</b> <small>PRIORITY 1 - Delivery is guaranteed next business morning in most areas. If there were a delay or other circumstances beyond our control, we would do our best to make delivery as soon as possible. If the delivery is delayed for any reason, we will make every effort to get it to you as soon as possible.</small>		<input type="checkbox"/> <b>DRY ICE</b> <small>Use</small>		<input type="checkbox"/> <small>Overnight Delivery</small>		<b>CONSEQUENTIAL DAMAGES</b> <small>We will not be liable for or liable for any loss or damage resulting from the use of this service. We are not responsible for any damage to your property. This includes loss of income, interest, profits, attorney fees and other costs, but is not limited to these items. Such damages are called "consequential damages."</small>	
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USE THIS AIRBILL FOR DOMESTIC SHIPMENTS AND FOR SHIPMENTS FROM PUERTO RICO TO THE U.S.A.  
FILL OUT PURPLE ARROWS FOR ASSISTANCE, CALL 800-220-6355, TOLL FREE  
IN ALASKA AND HAWAII, CALL 800-220-3064  
SEE BACK FORM SIDE FOR COMPLETE PREPARATION INSTRUCTIONS

Sender's Federal Express Acco. #

Date

50498

0752-5840-2

From (Your Name) <b>DALLAS DASH</b>	Your Phone Number (Very Important) <b>1200-592-1601</b>
Company <b>ECOLOGY &amp; ENVIRONMENT, INC.</b>	Department/Floor No.
Street Address <b>1509 MAIN ST STE 814</b>	City <b>AUSTIN</b>
City <b>DALLAS</b>	State <b>TX</b>
ZIP * Zip Code Required For Correct Invoicing <b>75201</b>	
AIRBILL NO. <b>851764675</b>	

To (Recipient's Name) <b>2711 LBJ MILITARY</b>	Recipient's Phone Number (Very Important) <b>1-1</b>
Company <b>THE ECOLOGY GROUP</b>	Department/Floor No.
Exact Street Address (Use of P.O. Boxes or P.O. Box Codes Will Delay Delivery And Result In Extra Charge)	
City <b>AUSTIN</b>	State <b>X</b>
ZIP Street Address Zip Required (in P.O. Box * Zip Only)	

**YOUR BILLING REFERENCE INFORMATION (FIRST TWELVE CHARACTERS WILL APPEAR ON INVOICE)**

3

PAYMENT	<input type="checkbox"/> By Check	<input type="checkbox"/> Bill Recipient's FedEx Acct. No.	<input type="checkbox"/> Bill 3rd Party FedEx Acct. No.	<input type="checkbox"/> Bill Credit Card
	FedEx Acct. No. or Major Credit Card No. <b>0200-7751-4</b>			
	<input type="checkbox"/> Cash			

<b>SERVICES</b> <b>CHECK ONLY ONE BOX</b>	<b>DELIVERY AND SPECIAL HANDLING</b> <b>CHECK SERVICES REQUIRED</b>	PACKAGES	WEIGHT	YOUR DECLARED VALUE (Same Field)	OVER SIZE	ZIP * Zip Code of Street Address Required																							
<table border="1"> <tr> <td><input type="checkbox"/> <b>PRIORITY 1 OVERNIGHT LETTER</b> (Priority Letters - 6 oz. FedEx Packaging) <input checked="" type="checkbox"/> Using Your Packaging 17" x 13"</td> <td><input type="checkbox"/> HOLD FOR PICK-UP (Give the Federal Express driver where you want package held in Section H at right)</td> </tr> <tr> <td><input type="checkbox"/> <b>OVERNIGHT DELIVERY</b> <b>USING DURA PACKAGING</b> 2 oz. - 17 oz. 12" x 17" x 3"</td> <td><input type="checkbox"/> DELIVER WEEKDAY</td> </tr> <tr> <td><input type="checkbox"/> <b>Overnight Box</b> 12" x 17" x 3"</td> <td><input type="checkbox"/> DELIVER SATURDAY (Extra charge applies)</td> </tr> <tr> <td><input type="checkbox"/> <b>Overnight Tube</b> 36" x 1" x 3"</td> <td><input type="checkbox"/> RESTRICTED ARTICLES SERVICE (RA) and Standard Air Packages only (Extra charge applies)</td> </tr> <tr> <td><input type="checkbox"/> <b>STANDARD AIR</b></td> <td><input type="checkbox"/> <b>EMERGENCY SECURITY SERVICE (ESS)</b> (Extra charge applies)</td> </tr> <tr> <td><input type="checkbox"/> Delivery not later than midnight business day</td> <td><input type="checkbox"/> DRY ICE _____</td> </tr> <tr> <td colspan="6"><b>SERVICE COMMITMENT</b> Federal Express is committed to prompt and reliable delivery. We guarantee to deliver your package within 24 hours of pickup, or refund your money if we do not. If you are not satisfied with our service, then a claim can be filed with us. Standard Air, Domestic Air, Ground, Next Business Day, and Next Day Air services are not available in all areas. Please see back for details.</td> </tr> <tr> <td colspan="6">9 <input type="checkbox"/> SATURDAY PICK-UP OR SATURDAY DROP-OFF (Extra charge applies)</td> </tr> </table>						<input type="checkbox"/> <b>PRIORITY 1 OVERNIGHT LETTER</b> (Priority Letters - 6 oz. FedEx Packaging) <input checked="" type="checkbox"/> Using Your Packaging 17" x 13"	<input type="checkbox"/> HOLD FOR PICK-UP (Give the Federal Express driver where you want package held in Section H at right)	<input type="checkbox"/> <b>OVERNIGHT DELIVERY</b> <b>USING DURA PACKAGING</b> 2 oz. - 17 oz. 12" x 17" x 3"	<input type="checkbox"/> DELIVER WEEKDAY	<input type="checkbox"/> <b>Overnight Box</b> 12" x 17" x 3"	<input type="checkbox"/> DELIVER SATURDAY (Extra charge applies)	<input type="checkbox"/> <b>Overnight Tube</b> 36" x 1" x 3"	<input type="checkbox"/> RESTRICTED ARTICLES SERVICE (RA) and Standard Air Packages only (Extra charge applies)	<input type="checkbox"/> <b>STANDARD AIR</b>	<input type="checkbox"/> <b>EMERGENCY SECURITY SERVICE (ESS)</b> (Extra charge applies)	<input type="checkbox"/> Delivery not later than midnight business day	<input type="checkbox"/> DRY ICE _____	<b>SERVICE COMMITMENT</b> Federal Express is committed to prompt and reliable delivery. We guarantee to deliver your package within 24 hours of pickup, or refund your money if we do not. If you are not satisfied with our service, then a claim can be filed with us. Standard Air, Domestic Air, Ground, Next Business Day, and Next Day Air services are not available in all areas. Please see back for details.						9 <input type="checkbox"/> SATURDAY PICK-UP OR SATURDAY DROP-OFF (Extra charge applies)					
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9 <input type="checkbox"/> SATURDAY PICK-UP OR SATURDAY DROP-OFF (Extra charge applies)																													
Total	Total	Total																											
PICKED UP AT Shipper's Door <input type="checkbox"/> Regular Stop <input type="checkbox"/> On-Call Stop <input type="checkbox"/> FedEx Local																													
Federal Express Corp. Employee No. <b>123456</b>																													
Daily/Time For Federal Express Use <b>12:00 PM</b>																													

**HOLD FOR PICK-UP AT THIS FEDERAL EXPRESS ADDRESS**

Street Address (See Service Guide or Call 800-220-5355)

City \_\_\_\_\_ State \_\_\_\_\_

Federal Express Use  
Base Charges

Declared Value Charge

Origin Agent Charge

Other \_\_\_\_\_

Toll Charges \_\_\_\_\_

**YOUR DECLARED VALUE**

**DAMAGE OR LOSS**

We are liable for no more than \$100 per package in the event of physical damage to the package you ship via a Declared Value service to the 10th and document the value loss in the event of a claim. We charge 30% for each additional \$100 of declared value up to the maximum liability of \$1000. Declared Value is subject to restrictions shown on the back of the Shipper's Copy of this airbill. We make no express or implied warranties.

**DELAY**

There is always a risk of late delivery or non-delivery. In the event of a late delivery Federal Express will, at your request, return an transportation charges paid. See back of Shipper's Copy of this airbill for further information.

**CONSEQUENTIAL DAMAGES**

We are not responsible or liable for any loss or damage resulting from direct, non-delivery or damage to a package except as noted above. This includes loss of sales, income, interest, costs, attorney fees and other costs, but is not limited to them. Our liability does not extend to consequential damages.

PART  
#204173901  
FEC-S-751-1000  
REVENUE DATE:  
10/54

PRINTED U.S.A. SHG

**SHIPPER'S COPY**



USE THIS AIRBILL FOR DOMESTIC SHIPMENTS AND FOR SHIPMENTS FROM PUERTO RICO TO THE U.S.A.  
FOR AIRSHIPMENTS TO CANADA, FOR ASSISTANCE, CALL 800-238-5355, TOLL FREE  
IN ALASKA AND HAWAII, CALL 800-238-3944  
SEE BACK OF FORM SET FOR COMPLETE PREPARATION INSTRUCTIONS

Customer Service Areas

Instructions

Date

50498

0752-9840-2

From (Your Name)	Your Phone Number (Very Important)	To (Recipient's Name)	Recipient's Phone Number (Very Important)
Company	Department/Floor No.	Company	Department/Floor No.
ECOLOGY & ENVIRONMENT INC			
Street Address	Exact Street Address (Use of P.O. Boxes or P.O. Zip Codes Will Delay Delivery And Result In Extra Charge)		
1509 MAIN ST STE 814		City	State
DALLAS	TX		
AIRBILL NO. <b>851764664</b>	ZIP *Zip Code Required For Correct Invoicing	ZIP Street Address Zip Required (No P.O. Box)	ZIP Street Address Zip Required (No P.O. Box)
7 9 2 0 1			

**YOUR BILLING REFERENCE INFORMATION (FIRST TWELVE CHARACTERS WILL APPEAR ON INVOICE)**

3

PAYMENT  Del Shipped

FM Freight's FedEx Acct. No.

**00000-9751-4**

Bill Credit Card

Fill in here below

Fill in here below

Fill in here below

Cash

FedEx Acct. No. or Major Credit Card #

**SERVICES**

CHECK ONLY ONE BOX

**PRIORITY 1 - OVERNIGHT LETTER**

Overnight Delivery 6  Your Packaging

Using Your Package  
9x12"

**OVERNIGHT DELIVERY  
USING OUR PACKAGING**

Counter-Pak Overnight Letters  
12" x 15"

Overnight Box  
12" x 17" x 3"

A

Overnight Tube  
36" x 6" x 6"  B

**STANDARD AIR**

Delivery not later than  
second business day

**SERVICE COMMITMENT**

PROPERTY DAMAGE: We are not responsible for damage to packages weighing  
4 lbs. or less. If your package weighs 4 lbs. or more, we will not be liable for  
any damage to your package unless it is caused by negligence or wanton  
abuse. STANDARD AIR: Generally, next business day delivery. Not for  
overnight delivery. Standard Air service is available for packages weighing  
up to 70 lbs. and up to 100 cubic feet. Standard Air service is not available  
for packages containing dangerous goods.

**DELIVERY AND SPECIAL HANDLING  
CHECK SERVICES REQUIRED**

HOLD FOR PICK-UP Give the Federal Express  
Address of your place of business or home to Section  
H or Pipe

DELIVER WEEKDAY

DELIVER SATURDAY (if available)

RESTRICTED ARTICLES SERVICE (LAS)

Standard Air Packages Only. For Detailed Services  
12" x 15" x 3"

SIGNATURE SECURITY SERVICE (SSS)

Item charge required

DRY ICE  LBS

OTHER SPECIAL SERVICE

SATURDAY PICK UP OR SATURDAY DROP OFF

Delivery Date Desired

PACKAGES

WEIGHT

YOUR DECLARED  
VALUE  
(See Right)

OVER  
SIZE



USE THIS AIRBILL FOR DOMESTIC SHIPMENTS AND FOR SHIPMENTS FROM PUERTO RICO TO THE U.S.A.  
FEE: SUR PURPLE AIRMAIL PER OUNCE, CALL 800-238-3232, TOLL FREE.  
IN ALASKA AND HAWAII CALL 800-238-3232.

SEE BACK FOR CERTAIN DOCUMENT PREPARATION INSTRUCTIONS

Shipper's Federal Express Account No. [REDACTED]

Date [REDACTED]

50498

0752-5840-2

From (Your Name) <b>John Doe</b>	Your Phone Number (Very Important) <b>713-555-1234</b>	To (Recipient's Name) <b>Jane Doe</b>	Recipient's Phone Number (Very Important) <b>713-555-6789</b>
Company <b>ECOLOGY &amp; ENVIRONMENT INC</b>	Department/Floor No	Company <b>Superior Electronics Inc.</b>	Department/Floor No
Street Address <b>1509 MAIN ST STE 814</b>		Exact Street Address (use of P.O. Boxes or P.O. Zip Codes Will Delay Delivery And Result In Extra Charge) <b>1509 Main St Ste 814</b>	
City <b>DALLAS</b>	State <b>TX</b>	City <b>Houston</b>	State <b>TX</b>
AIRBILL NO. <b>851764653</b>	ZIP "Zip Code Required For Correct Invoicing" <b>75201</b>	ZIP "Zip Code Required For Correct Invoicing" <b>77043-3112</b>	

YOUR BILLING REFERENCE INFORMATION (FIRST TWELVE CHARACTERS WILL APPEAR ON INVOICE)

PAYMENT  Bill Shipper  Bill Recipient's FedEx Acct. No.  Bill My Accountant  
[REDACTED]  Cash  FedEx Acct. No. or Major Credit Card No. **0000-7781-4**  On Credit Card  
[REDACTED]  Paid in Advance  Paid in Advance

**SERVICES**  
**CHECK ONLY ONE BOX**

- PRIORITY 1 OVERNIGHT LETTER**  
Overnight Delivery  
Same Day Pickup  
6:15 AM
- OVERNIGHT DELIVERY  
USING OUR PACKAGING**  
Overnight Delivery  
12PM-11PM
- STANDARD AIR**  
Overnight Delivery  
12PM-11PM
- STANDARD AIR**  
Delivery Next Day  
Standard Delivery Day
- SERVICE COMMITMENT**  
Priority 1 - Overnight delivery  
Standard Air - Delivery by next day  
Standard Air - Delivery by next day, and Standard Air - if not delivered by next day, a refund will be issued  
Standard Air - Delivery by next day, and Standard Air - if not delivered by next day, a refund will be issued

**DELIVERY AND SPECIAL HANDLING  
CHECK SERVICES REQUIRED**

- 1 HOLD FOR PICK-UP** Over the Federal Express  
Telephone when you want package held in Dallas  
or right
- 2 DELIVER WEEKDAY**
- 3 DELIVER SATURDAY** (Extra charge applies)
- 4 RESTRICTED ARTICLES SERVICE** (P-1 and  
Standard Air Purchases Only. Extra charge applies)
- 5 SIGNATURE SECURITY SERVICE** (S-500  
Extra charge applies)
- 6 DAY AIR** [REDACTED] lbs
- 7 OTHER SPECIAL SERVICE** \_\_\_\_\_
- 8**
- 9 SATURDAY PICK-UP OR SATURDAY DROP-OFF**  
[REDACTED] Charge \$100/lb

PACKAGES	WEIGHT	YOUR DECLARED VALUE (in \$100s)	OVER SIZE
1	1	1	
2	1	1	
3	1	1	
4	1	1	
5	1	1	
6	1	1	
7	1	1	
8	1	1	
9	1	1	

**HOLD FOR PICK-UP AT THIS FEDERAL EXPRESS ADDRESS:**  
Street Address (See Service Options or Call 800-238-3232)

City \_\_\_\_\_ State \_\_\_\_\_

ZIP "Zip Code of Street Address Required"

Federal Express Ltd  
1100 2nd Avenue, Seattle, WA 98101

Decimal Value Charge

Union Agent Charge

Other

Total Charges

**YOUR DECLARED VALUE**

**\$1000 OR LOSS**

We are liable for no more than \$100 per package or \$100  
per day for damage resulting from loss or damage  
occurring while in our care, custody or control during  
loss or the event of a claim. We charge \$20 for each  
package \$100 of declared value up to the maximum  
allowable value. Declared values are shown on the  
face of the bill of lading & copy of the order. We  
make no charges for original shipping.

**DELAY**

There is allowed a rate of 10% damage or delay. In the  
event of a claim for damage or delay, we must deduct  
any amount paid for shipping and handling before  
any amount is paid for damage or delay.

**CONSEQUENTIAL DAMAGES**

We will not be responsible or liable for any loss or damage  
resulting from direct, indirect, or consequential damage  
incurred as a result of damage to packages. The liability  
for damage to packages and other costs that are not  
covered by insurance, such as labor charges, are called  
consequential damages.

MR1  
#2041738901  
FCC-S-751-1000  
INVESTIGATE  
10/84  
PRINTED U.S.A. SRC

SHIPPER'S COPY

**ENVIRONMENTAL PROTECTION AGENCY**  
**Office of Enforcement**

IT IS DUE IN TWO WEEKS.  
OF THE ORIGINAL.

REGION 6

**First International Bldg., 1201 Elm St.  
Dallas, Texas 75270**

**CHAIN OF CUSTODY RECORD**

**Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files**

6-5888

ENVIRONMENTAL PROTECTION AGENCY  
Office of Enforcement

REGION 6  
First International Bldg., 1201 Elm St.  
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME					NO. OF CON- TAINERS	REMARKS
	SAMPLERS, (Signature)	DATE	TIME	COMP	GRAB		
STA. NO.				STATION LOCATION			
A1	ED0485	8:46 - 8:56	X			1	Proj # 6-11765 Splits
B1	8/20/85	8:57 - 9:42	X			1	6-11770
C1	8/20/85	9:45 - 6:48	X			1	6-11776
D1	8/20/85	9:51 - 9:53	X			1	6-11782
E1	8/20/85	8:58 - 8:58	X			1	6-11788
F1	8/20/85	9:00 - 9:02	X			1	6-11789
G1	8/20/85	9:03 - 9:07	X			1	6-11800
H1	8/20/85	9:08 - 9:12	X			1	6-11801
I1	8/20/85	9:14 - 9:16	X			1	6-11812
A2	8/20/85	12:01 - 12:01	X			1	6-11815
B2	8/20/85	12:03 - 12:05	X			1	6-11816
C2	8/20/85	12:07 - 12:08	X			1	6-11817
H2	8/20/85	12:20 - 12:30	X			1	6-11818
Relinquished by: (Signature) Date / Time Received by: (Signature)							
<i>John G. O'Brien</i>		8/20/85	15:45	<i>John G. O'Brien</i>			
Relinquished by: (Signature)		Date / Time	Received by: (Signature)	Relinquished by: (Signature)		Date / Time	Received by: (Signature)
Relinquished by: (Signature)		Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6-5884

ENVIRONMENTAL PROTECTION AGENCY  
Office of Enforcement

OF THE ORIGINAL.

REGION 6  
First International Bldg., 1201 Elm St.  
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME					NO. OF CONTAINERS	REMARKS								
	SAMPLERS: (Signature)	M. McDonald, J. West, H. Lentz					1	2	3	4	5				
STA. NO.	DATE	TIME	COM.	GRAB	STATION LOCATION										
A1	8/20/85	12:00		X	Injective Impoundment, North Pond					1	1			6-11754	MFB 341
B1	8/20/85	12:42		X	Injective Impoundment, North Pond					1	1			6-11767	MFB 342
C1	8/20/85	12:58		X	Injective Impoundment, North Pond					1	1			6-11771	MFB 343
D1	8/20/85	12:59		X	Injective Impoundment, South Pond					1	1			6-11777	MFB 344
E1	8/20/85	12:58		X	Injective Impoundment, South Pond					1	1			6-11783	MFB 345
F1	8/20/85	12:58		X	Injective Impoundment, South Pond					1	1			6-11791	MFB 346
G1	8/20/85	12:57		X	Injective Impoundment, West Pond					1	1			6-11795	MFB 347
H1	8/20/85	12:42		X	Injective Impoundment, West Pond					1	1			6-11806	MFB 348
I1	8/20/85	12:46		X	Injective Impoundment, West Pond					1	1			6-11807	MFB 349
Blank	8/20/85	12:45		X	Field Rinseate Blank					2	2	1	1	6-12003, 6-12004	MFB 352
Blank	8/20/85	12:50		X	Field Rinseate Blank					2	2	1	1	6-12009, 6-12008	MFB 353
A2	8/20/85	12:42		X	Injective Impoundment, North Pond					1	1			6-12014	MFB 354
B2	8/20/85	12:50		X	Injective Impoundment, North Pond					1	1			6-12020	MFB 351
C2	8/20/85	12:53		X	Injective Impoundment, North Pond					1	1			6-11953	MFB 354
D2	8/20/85	12:50		X	Injective Impoundment, South Pond					1	1			6-11958	MFB 355
Relinquished by: (Signature)		Date / Time	Received by: (Signature)			Relinquished by: (Signature)		Date / Time	Received by: (Signature)						
<i>McDonald, MFB 341</i>		8/20/85 12:42	<i>Mike Lentz</i>			<i>Mike Lentz</i>		8/21/85 13:00	<i>Farlow, MFB 346</i>						
Relinquished by: (Signature)		Date / Time	Received by: (Signature)			Relinquished by: (Signature)		Date / Time	Received by: (Signature)						
<i>John A. West, MFB 343</i>															
Relinquished by: (Signature)		Date / Time	Received for Laboratory by: (Signature)			Date / Time		Remarks Section H1 & QC Batch No. 85176V642 Case No. 4707 85176V642 Case No. 4707							
<i>John A. West, MFB 343</i>															

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6-5882

IS TO BE BY ---  
OF THE ORIGINAL.

**ENVIRONMENTAL PROTECTION AGENCY**  
**Office of Enforcement**

## **CHAIN OF CUSTODY RECORD**

**REGION 8**  
**First International Bldg., 1201 Elm St.**  
**Dallas, Texas 75270**

**Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files**

6-5886

ENVIRONMENTAL PROTECTION AGENCY  
Office of Enforcement

REGION 6  
First International Bldg., 1201 Elm St.  
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME					NO. OF CONTAINERS	REMARKS						
	SAMPLERS: (Signature)												
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION								
A1	8/20/85	8:50		X	Inactive Instrumentation, West Pond		8	1	2	4			
B1	8/20/85	9:10		X	Inactive Instrumentation, East Pond		4	1	1	2			
C1	8/20/85	9:20		X	Inactive Instrumentation, East Pond		4	1	1	2			
D1	8/20/85	9:30		X	Inactive Instrumentation, East Pond		4	1	1	2			
E1	8/20/85	9:30		X	S.A.T.O. Laboratory, Beauty Pond		4	1	1	2			
F1	8/20/85	9:40		X	Inactive Instrumentation, East Pond		4	1	1	2			
G1	8/20/85	9:50		X	Inactive Instrumentation, West Pond		4	1	1	2			
H1	8/20/85	9:50		X	Inactive Instrumentation, West Pond		4	1	1	2			
I1	8/20/85	9:50		X	Inactive Instrumentation, West Pond		4	1	1	2			
Relinquished by: (Signature) Date / Time Received by: (Signature)													
<i>John F. Miller</i> 8/21/85 12:00		<i>John F. Miller</i>		<i>John F. Miller</i>		<i>John F. Miller</i>		<i>John F. Miller</i>		<i>John F. Miller</i>		<i>John F. Miller</i>	
Relinquished by: (Signature) Date / Time Received by: (Signature)													
Relinquished by: (Signature) Date / Time Received for Laboratory by: (Signature)													
Remarks													
<i>4731 8/21/85</i> <i>4731 8/21/85</i> <i>4731 8/21/85</i>													
Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files													

4731 Part 1 lot # 65204222

5--5881

IT IS DUE TO THE QUALITY  
OF THE ORIGINAL.

**ENVIRONMENTAL PROTECTION AGENCY**  
**Office of Enforcement**

Organic  
**CHAIN OF CUSTODY RECORD**

**REGION 6**  
**First International Bldg., 1201 Elm St.**  
**Dallas, Texas 75270**

**Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files**

6-5887

**ENVIRONMENTAL PROTECTION AGENCY**  
**Office of Enforcement**

**IS TO BE THE QUALITY  
OF THE ORIGINAL.**

REGION 6

**First International Bldg., 1201 Elm St.  
Dallas, Texas 75270**

## **CHAIN OF CUSTODY RECORD**

**Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files**

6-5885



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VI  
1201 ELM STREET  
DALLAS, TEXAS 75270

RECEIPT FOR SAMPLES

NAME AND TITLE OF EPA REPRESENTATIVE: Miles

FIT Group

Miles

SAMPLES COLLECTED:

<u>SAMPLE NUMBER</u>	<u>TIME</u>	<u>PLACE COLLECTED</u>	<u>TYPE</u>	<u>VOLUME</u>
6-11816	0:37 12:41	Subsurface Soil and Impoundment North Pond	Subsurface Soil	32oz
6-11816	12:30 12:45	Subsurface Soil and Impoundment South Pond	Subsurface Soil	32oz
6-11817	13:17 13:28	Impoundment North Pond	Subsurface Soil	32oz
6-11818	13:20 13:30	Impoundment South Pond	Subsurface Soil	32oz

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE

Joe E. Porter - Environmental Engineer  
Vertac Chemical Corp - West Helena Plant  
P.O. Box 22449 - West Helena, AR 723

Joe E. Porter August  
(Signature)

DISTRIBUTION:

One copy facility representative  
One copy for Inspector's record  
Original to Regional Office



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**REGION VI  
1201 ELM STREET  
DALLAS, TEXAS 75270**

8/21/85  
(DABE)

**RECEIPT FOR SAMPLES**

**NAME AND TITLE OF EPA REPRESENTATIVE:** John R. Stover

## FIT Ground water Hydrologist

Miles W. Ballou

**(Signature)**

**SAMPLES COLLECTED:**

**ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE**

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

Ted E. Porter - Environmental Engineer  
Vice President Chemical Corp - West Helena Plant  
P.O. Box 3149 - West Helena, AR 72350

August 21, 1985  
(Date)

**DISTRIBUTION:**

One copy facility representative  
One copy for inspector's records  
Original to Regional Office



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION VI**  
**1201 ELM STREET**  
**DALLAS, TEXAS 75220**

8/2/85  
(Date)

**RECEIPT FOR SAMPLES**

NAME AND TITLE OF EPA REPRESENTATIVE: Miles Boston

## FIT Ground water Hydrogeologist

Miles W. Bottom  
(Signature)

(Signature)

**SAMPLES COLLECTED:**

## **ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE**

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

Ted E. Partee - Environmental Engineer  
Vortex Chemical Corp - West Helena Plant  
P.O. Box 2749 - West Helena, AR 72390

Tot Edwards  
(Signature)                  August 21, 1985  
  (Date)

197  
(Part)

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## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI

1201 ELM STREET  
DALLAS, TEXAS 75270

8/20/85

(Date)

RECEIPT FOR SAMPLESNAME AND TITLE OF EPA REPRESENTATIVE:

Miles Bolton

F.I.-Ground Water Hydrologist

Miles W. Bolton  
(Signature)SAMPLES COLLECTED:

<u>SAMPLE NUMBER</u>	<u>TIME</u>	<u>PLACE COLLECTED</u>	<u>TYPE</u>	<u>VOLUME</u>	<u>SPLIT SAMPLE REQUESTED</u>	<u>PROVIDED</u>
6-11765	8:28 - 8:36	Inactive Impoundment North Pond	Surface Soil	32 oz	yes	yes
6-11770	8:37 - 8:42	Inactive Impoundment North Pond	Surface Soil	"	yes	yes
6-11776	8:45 - 8:50	Inactive Impoundment North Pond	Surface Soil	"	yes	yes
6-11782	8:53 - 8:52	South Pond	Surface Soil	"	yes	yes
6-11788	8:58 - 9:02	Inactive Impoundment South Pond	Surface Soil	"	yes	yes
6-11789	9:02 - 9:05	South Pond	Surface Soil	"	yes	yes
6-11800	9:07 - 9:08	Inactive Impoundment West Pond	Surface Soil	"	yes	yes
6-11801	9:12 - 9:14	West Pond	Surface Soil	"	yes	yes
6-11812	9:16	Inactive Impoundment West Pond	Surface Soil	"	yes	yes

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

Joe E. Porter - Environmental Engineer  
Vortac Chemical Corp - West Helens Plant  
P.O. Box 2749 - West Helens, PA 72390 501-672-3701

Joe E. Porter  
(Signature)August 20, 85  
(Date)

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## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI  
1201 ELM STREET  
DALLAS, TEXAS 752708/20/85  
(Date)RECEIPT FOR SAMPLESNAME AND TITLE OF EPA REPRESENTATIVE:Miles W. BoltonFET Groundwater HydrogeologistMiles W. Bolton  
(Signature)SAMPLES COLLECTED:

SAMPLE NUMBER	TIME	PLACE COLLECTED	SOIL TYPE	VOLUME	SPLIT SAMPLE REQUESTED	SPLIT SAMPLE PROVIDED
A1	0828		Inorganic	18.02	yes	yes
	0836	North Impoundment	Organic	8.02		
B1	0839	" "	Inorganic	16.02	"	"
	0842		Organic	8.02		
C1	0845	" "	Inorganic	340ML		
	0848		Organic	"		
D1	0850		Inorganic	"		
	0853	South Impoundment	Organic	"		
E1	0852	" "	Inorganic	"		
	0858		Organic	"		
F1	0900		Inorganic	"		
	0902	" "	Organic	"		
G1	0905		Inorganic	"		
	0907	West Impoundment	Organic	"		
H1	0912	" "	Inorganic	"		
	0917		Organic	"		
I1	0916	" "	Inorganic	"		
			Organic	"		

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:Joe E. Porter - Environmental Engineer  
Vortrac Chemical Corp - West Helena Plant  
P.O. Box 2149 - West Helena, AR 72390Joe E. Porter  
(Signature)August 21, 1985  
(Date)DISTRIBUTION:

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI  
1301 ELM STREET  
DALLAS, TEXAS 75270

8/20/85  
(D-151)

**RECEIPT FOR SAMPLES**

NAME AND TITLE OF EPA REPRESENTATIVE: Miles Bilton  
FIT Ground water Hydrologist  
Miles W. Bilton  
(Signature)

SAMPLES COLLECTED:

**ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE**

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

Joe E. Tarter - Environmental Engineer  
Vermac Chemical Corp - West Helena Plant  
P.O. Box 2649 - West Helena, AR 72390

August 21, 1985  
(Date)

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OF THE ORIGINAL.

Photographer / Witness

Miles Bolton / Weldon Day

Date / Time / Direction

8/20/85 / 8:50 / Southwest - Southeast

Comments: Photograph 1 of 7.

Panoramic view of the

Vertac, West Helena site.

Samples are being collected at the site.

Vertac, West Helena site  
West Helena, AR (AR361)



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AS LEGIBLE AS THIS LABEL,  
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OF THE ORIGINAL.

**Photographer / Witness**

Miles Bolton / Weldon Day

**Date / Time / Direction**

8/20/85 / 8:50 / Southeast

**Comments:** Photograph 3

Panoramic View continued.

\_\_\_\_\_

\_\_\_\_\_

Vertac-West Helena site

West Helena, AR (AR 361)





Photographer / Witness

Miles Burton / Weldon Day

Date / Time / Direction

8/20/85 / 12:42 / East

Comments: Photograph 4

Sample station A



Photographer / Witness

Miles Burton / Weldon Day

Date / Time / Direction

8/20/85 / 12:47 / East

Comments: Photograph 5

Sample station B



Photographer / Witness

Miles Burton / Weldon Day

Date / Time / Direction

8/20/85 / 15:30 / East

Comments: Photograph 6

Sample station C

*Vertical - West Holocene soil  
West Holocene, AR  
A.R. core)*



Photographer / Witness

Miles Burton / Weston Day

Date / Time / Direction

8/26/83 / 13 mi. East

Comments: Photograph 7

Sample station D



Photographer / Witness

Miles Burton / Weston Day

Date / Time / Direction

8/26/83 / 8 mi. North

Comments: Photograph 8

Sample station E



Photographer / Witness

Miles Burton / Weston Day

Date / Time / Direction

8/26/83 / 8 mi. North

Comments: Photograph 9

Sample Station F

Verde - West Helena  
West Helena, AR  
(NR 361)



Photographer / Witness

Miles Burton/Wolden Day

Date / Time / Direction

8/21/55/ 9.52/ South

Comments: Photograph 10

Sample station 6



Photographer / Witness

Miles Burton/Wolden Day

Date / Time / Direction

8/21/55/ 9.54/ North

Comments: Photograph 11

Sample station 11



Photographer / Witness

Miles Burton/Wolden Day

Date / Time / Direction

8/21/55/ 9.56/ South

Comments: Photograph 12

Sample station 12

*return to my notes*

*last photo, MR*

*(AR 361)*

